

Claims

What is claimed is:

- 5 1. A method for policy based accounting for packet forwarding services, the method comprising:
  - receiving a packet to be forwarded over a network;
  - accessing a policy table to identify a billing party associated with the packet;
  - forwarding the packet only if the policy table identifies the billing party associated
  - 10 with the packet;
  - recording data corresponding with the forwarding of the packet and the associated billing party.
2. The method for policy based accounting of claim 1, further comprising returning a
- 15 message to a source of the packet to be forwarded indicating a failed transmission if the policy table does not identify the billing party associated with the packet.
3. The method for policy based accounting of claim 1, further comprising
- transmitting an authorization request message associated with the packet and only
- 20 forwarding the packet subsequent to receiving an authorization approval message associated with the packet.
4. The method for policy based accounting of claim 1, further comprising:
- determining whether the billing party requires authorization before forwarding
- 25 the packet;
- transmitting an authorization request message associated with the packet;
- forwarding the packet only subsequent to receiving an authorization approval message associated with the packet.
5. The method for policy based accounting of claim 1, further comprising
- 30 transmitting the recorded data to a network manager computer.

6. The method for policy based accounting of claim 1, further comprising classifying the packet to determine a service grade associated with the packet.
7. The method for policy based accounting of claim 1, wherein the policy table  
5 comprises a table identifying a billing party for each of multiple sets of circumstances associated with a packet.
8. A method for policy based accounting in an Multi-Protocol Label Switched network, the method comprising:
- 10 receiving a label switched path (LSP) signaling message at a first packet forwarding device;  
accessing a policy table to identify a billing party associated with the signaling message;  
forwarding the signaling message to a second downstream packet forwarding  
15 device only subsequent to identifying the associated billing party in the policy table.
9. The method for policy based accounting of claim 8, further comprising returning a message to a source of the packet to be forwarded indicating a failed transmission if the policy table does not identify a billing party associated with the packet.
- 20
10. The method for policy based accounting of claim 8, further comprising transmitting an authorization request message associated with the packet and only forwarding the packet subsequent to receiving an authorization approval message associated with the packet.
- 25
11. The method for policy based accounting of claim 8, the method further comprising:
- determining whether the billing party requires authorization before forwarding the packet;
- 30 transmitting an authorization request message associated with the packet;  
forwarding the packet only subsequent to receiving an authorization approval message associated with the packet.

12. The method for policy based accounting of claim 8, further comprising transmitting the recorded data to a network management computer.
- 5 13. The method for policy based accounting of claim 8, wherein the policy table comprises a table identifying a billing party for a particular set of circumstances associated with the packet.
14. A packet forwarding device, comprising:  
10 a port interface for receiving a data packet; and  
a policy engine including a policy table for determining a billing party associated with the data packet based on information included in the data packet.
15. The packet forwarding device of claim 14, wherein the policy table includes rules  
15 identifying a billing party and a payment mechanism for different data packets.
16. The packet forwarding device of claim 14, further comprising:  
a memory;  
a classifier engine for recording statistics associated with data packets forwarded  
20 by the packet forwarding device to the memory, each statistic identifying the associated billing party.
17. The packet forwarding device of claim 16, further comprising a billing engine for transmitting information including at least a portion of the recorded statistics to a remote  
25 computer.
18. The packet forwarding device of claim 14 further comprising a user interface to permit the policy table to be modified from a remote computer.

19. The packet forwarding device of claim 14, wherein the table identifies a first payment mechanism for a first set of data packets and a second payment mechanism for the second set of data packets, the first payment mechanism being different from the second payment mechanism.

5

20. The packet forwarding device of claim 14, wherein the table identifies the destination of the data packet as the billing party for at least one set of data packets.

21. The packet forwarding device of claim 14, wherein the table identifies a source  
10 from which authorization must be received before forwarding an associated data packet.

22. The packet forwarding device of claim 14, wherein the table identifies the billing party based at least in part on a current time of day.

23. A packet forwarding device, comprising:  
means for receiving a packet to be forwarded over a network;  
means for accessing a policy table to identify a billing party associated with the packet;  
means for forwarding the packet only if the policy table identifies a billing party  
15 associated with the packet;  
means for recording data corresponding with the forwarding of the packet and the  
20 associated billing party.

24. A computer-readable medium comprising program instructions for causing a  
25 processor to execute a method comprising:  
receiving a packet to be forwarded over a network;  
accessing a policy table to identify a billing party associated with the packet;  
forwarding the packet only if the policy table identifies a billing party associated  
with the packet;  
30 recording data corresponding with the forwarding of the packet and the associated  
billing party.

25. A system for policy based accounting in an Multi-Protocol Label Switched network, the system comprising:

means for receiving a label switched path (LSP) signaling message at a first packet forwarding device;

5 means for accessing a policy table to identify a billing party associated with the signaling message;

means for forwarding the signaling message to a second downstream packet forwarding device only subsequent to identifying the associated billing party in the policy table.

10

26. A computer-readable medium comprising program instructions for causing a data processor to execute a method comprising:

receiving a label switched path (LSP) signaling message at a first packet forwarding device;

15 accessing a policy table to identify a billing party associated with the signaling message;

forwarding the signaling message to a second downstream packet forwarding device only subsequent to identifying the associated billing party in the policy table.